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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/646,922

08/25/2003

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EXAMINER

SAMS, MATTHEW C

ART UNIT

PAPER NUMBER

2617

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/646,922	<b>Applicant(s)</b> MAKINO ET AL.	
	<b>Examiner</b> MATTHEW C. SAMS	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This office action is in response to the amendment filed on 1/15/2008.
2. Claims 1 and 2 have been amended.

### ***Response to Arguments***

3. Applicant's arguments filed 1/15/2008 have been fully considered but they are not persuasive.
4. In response to the applicant's argument regarding "JP 59-78654 does not show or suggest two different flexible leads (circuit boards) opposed to each other having a group of components opposed to a portion of the flexible lead which is free of a group of components", the examiner agrees.

The examiner agrees that JP 59-78654 does not show two circuit boards, but it is noted that the rejection doesn't say JP 59-78654 teaches two circuit boards. The examiner points to two locations in Fig. 3 that is viewed as anticipating the applicant's claim limitations of how a group of electronic circuit chips are mounted. It is also noted, as implied in the St. Regis Paper Co. v. Bemis Co., Inc., decision (193 USPQ 8, 11 (7<sup>th</sup> Cir. 1977), duplicating parts for a multiplied effect (*i.e.* implementing an electronic chip mounting location design philosophy twice) is not necessarily a patentable advance if the philosophy is known/obvious.

The examiner maintains the rejection because of the following reasoning:

Within the housing of a foldable electronic device, there is a limited amount of space and a finite number of operational parts to be functionally placed and it is well within the scope of one of ordinary skill in the art to find the combination of mounting locations (possibly through trial and error) that allows for the dissipation of heat (LCD driver circuit chips [*i.e.* amplifiers] should not be mounted directly above/below each other because it can stifle heat dissipation) in order to make the device as thin as possible to be aesthetically pleasing and convenient for the user to carry.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kweon et al. (US-6,925,313 hereafter, Kweon) in view of the cited prior art document JP 59-78654, hereafter document 59-78654.

Regarding claims 1 and 2, Kweon teaches a foldable electronic device (Fig. 1 [10] & Fig. 2 [20]) comprising a main body (Fig. 1 [10A]), a closure (Fig. 1 [10B]), a main display (Fig. 1 [12]), a subdisplay (Fig. 2 [22B]), a frame (Fig. 3 [24]), a chip mount area extending from the main display (Fig. 3 [27]) and a chip mount area extending from the subdisplay (Fig. 3 [28]). Kweon teaches the main body (Fig. 1 [10A]) and the closure (Fig. 1 [10B]) being connected to each other openably (Fig. 1 & 2), with the main display

(Fig. 1 [12]) having a screen exposed from an inner surface of the closure (Fig. 1) and the subdisplay (Fig. 2 [22B]) having a screen exposed from the back surface of the closure (Fig. 2), the frame (Fig. 3 [24]) being provided inside the closure (Fig. 5 [21, 22 & 24] and Col. 2 lines 48-50) and securing the main display and the subdisplay as arranged back to back (Fig. 1, Fig. 2, Fig. 3 and Col. 2 lines 40-42) with the chip mount areas being opposed to each other in an opening formed in the frame (Fig. 3) with the opposed surfaces of the respective chip mount areas having at least one portion with groups of electronic chips mounted thereon and at least one portion free of a group of electronic circuit chips. (Fig. 3 [27 & 28] & Fig. 5) Kweon teaches the chip mounting surfaces has a folded-over portion opposed to the frame and providing the chip mounting area. (Fig. 3 [27 & 28]) Kweon differs from the claimed invention by not explicitly reciting the at least one portion of the chip mount area of the flexible lead having a group of electronic circuit chips oppose the at least one portion of the chip mount area free of a group of electronic circuit chips and the at least one portion of the chip mount area of the flexible lead having a group of electronic chips oppose the at least one portion of the chip mount area free of a group of electronic circuit chips.

In an analogous art, document 59-78654 teaches a flexible circuit board where taller and shorter groups of chips are mounted in a staggered relation to each other (Claim 1, Page 3 lines 10-20 and Fig. 3) with at least one portion of the chip mount area of the flexible lead having a group of electronic circuit chips (Fig. 3 [2]) oppose the at least one portion of the chip mount area free of a group of electronic circuit chips (Fig. 3 [To the right of device 2]) and the at least one portion of the chip mount area of the

flexible lead having a group of electronic chips oppose the at least one portion of the chip mount area free of a group of electronic circuit chips. (Fig. 3 [First and second upside-down U shape chip mount area empty space across from chip 6]) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the LCD mounting arrangement of Kweon after modifying it to incorporate the flexible chip mounting surface and the staggered chip-mounting pattern of document 59-78654. One of ordinary skill in the art would have been motivated to do this since making portable electronic devices thinner allows them to be more convenient for the consumer to carry.

Further, it is noted that there is a limited amount of space and a finite number of operational parts to be functionally placed within said space of a foldable electronic device and it is well within the scope of one of ordinary skill in the art to find the combination of mounting locations (possibly through trial and error) that allows for the dissipation of heat (LCD driver circuit chips [*i.e.* amplifiers] should not be mounted directly above/below each other because it can stifle heat dissipation) in order to make the device as thin as possible to be aesthetically pleasing and convenient for the user to carry.

Regarding claim 3, Kweon in view of document 59-78654 teaches a foldable electronic device with a frame that has an opening in a second area (Fig. 3 [24]) adjacent to a first area covered with the subdisplay and the flexible lead extending from the subdisplay is folded over on the second area with the electronic chips in the chip mount area being positioned in the opening of the frame. (Fig. 3)

Regarding claim 4, Kweon in view of document 59-78654 teaches a flexible lead (Kweon Fig. 3 [25 & 27] & document 59-78654 Fig. 3) extending from the main display (Fig. 3 [27]) is folded over toward the frame side and folded-over lead portion has a surface opposed to the frame and providing the chip mount area, the electronic circuit chips in the chip mount area being positioned in the opening of the frame. (Fig. 3)

Regarding claim 5, Kweon in view of document 59-78654 teaches a flexible lead (Kweon Fig. 3 [25 & 28] & document 59-78654 Fig. 3) extending from the subdisplay (Fig. 3 [28]), has an outer end folded over toward the frame side and folded-over portion has a surface opposed to the frame and providing the chip mount area. (Fig. 3)

Regarding claim 6, Kweon in view of document 59-78654 teaches a foldable electronic device with a frame that has an opening in a second area (Fig. 3 [24]) adjacent to a first area covered with the subdisplay and the flexible lead extending from the subdisplay is folded over on the second area with the electronic chips in the chip mount area being positioned in the opening of the frame. (Fig. 3)

Regarding claim 7, Kweon in view of document 59-78654 teaches a flexible lead (Kweon Fig. 3 [25 & 27] & document 59-78654 Fig. 3) extending from the main display (Fig. 3 [27]) is folded over toward the frame side and folded-over lead portion has a surface opposed to the frame and providing the chip mount area, the electronic circuit chips in the chip mount area being positioned in the opening of the frame. (Fig. 3)

***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW C. SAMS whose telephone number is (571)272-8099. The examiner can normally be reached on M-F 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on (571)272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Eng/  
Supervisory Patent Examiner, Art Unit 2617

/MCS/  
/4/3/2008/